

Amendments to the Specification

Please replace paragraph [0021] with the following amended paragraph:

[0021] Referring more particularly to FIG. 3, one embodiment of an electronics drawer 300 in accordance with aspect to the present invention is depicted. In this embodiment, an enhanced thermal dissipation assembly is provided which includes a first cooling loop disposed substantially internal to the electronics drawer and a second cooling loop disposed external to the drawer. This thermal dissipation assembly can be characterized as an elastically coupled cold plate cooling system with an active primary cooling loop within the drawer (i.e., the first cooling loop). This first cooling loop includes the module cold plate 320 mechanically coupled to a processor module 310 which resides in a module socket 315. A pump 330 circulates coolant, such as water, through elastic cooling lines 325a, 325b between module cold plate 320 and heat rejection cold plate 335 (referred to as a “first fluid cold plate” in the appended claims). A system cold plate 340 (referred to as a “second fluid cold plate” in the appended claims) is cooled by an external water supply (not shown) and is mounted opposite the backside of the electronics drawer. The heat rejection cold plate 335 is allowed to project a small distance (e.g., 0.1 to 0.2 inches) out an opening in the back of the drawer, and is attached to biasing springs 336, which in turn are attached to ~~[[a]]~~ an L-shaped pressure plate 338 fixedly mounted to the drawer chassis. Pressure plate 338 is positioned so that when the electronics drawer is ~~docked~~ slid horizontally into a docked position (see FIG. 4A), springs 336 are compressed forcing the heat rejection cold plate 335 into good thermal contact with the system cold plate 340 with a planar main surface 334 (see FIG. 4A) of cold plate 335 (~~comprising i.e.,~~ a first planar heat transfer surface) and a planar main surface 341 of system cold plate 340 (~~comprising i.e.,~~ a second planar heat transfer surface) forced coplanar or physically engaging to facilitate the transfer of heat from the first liquid cooling subsystem to the second liquid cooling subsystem.

Please replace paragraph [0023] with the following amended paragraph:

[0023] FIGS. 4A and 4B depict one embodiment of a cooled multi-drawer electronics rack, generally denoted 400, in accordance with an aspect of the present invention. This electronics rack has a plurality of electronics drawers 430, all of which are shown docked within the chassis of the electronics rack except for drawer 430b which is shown open or undocked (for example, for servicing). Each drawer slides in a horizontal sliding direction 401 into a docked position, and in the docked position biasing springs 336 (FIG. 3) apply a biasing force to the first fluid cold plate (in this embodiment). Each electronics drawer is assumed to include a thermal dissipation assembly such as depicted in FIG. 3, with a planar main surface 334 of heat rejection cold plate 335 in physical contact with a planar main service surface 341 of a system cold plate 340 when the drawer is docked. The docked drawers are assumed to be powered and cooled. Also, as shown in FIG. 4B, a monolithic system cold plate can be employed to extract heat from the heat rejection cold plates of the various drawers. Cold plate 440 includes an inlet cooling line 442 and an outlet cooling line 444 through which coolant flows to remove heat from system cold plate 440. It will be appreciated that, alternatively, the single system cold plate could be replaced in function by any number of smaller cold plates plumbed in series or parallel.

Please replace paragraph [0024] with the following amended paragraph:

[0024] FIG. 5 depicts an alternate embodiment of a thermal dissipation assembly disposed within an electronics drawer, in accordance with an aspect of the present invention. This alternative embodiment employs a passive (i.e., no pump) primary cooling loop within the electronics drawer. As shown, a heat pipe or thermosiphon assembly is used to cool a processor module 510 disposed on a module socket 515. This assembly includes an evaporator heat transfer block 520, a ~~condenser heat transfer block~~ first fluid cold plate 530, and multiple heat pipes 525a, 525b, 525c connecting the evaporator 520 and the ~~condenser~~ first fluid cold plate 530. The evaporator heat transfer block 520 is attached to a surface of the electronics module 510. The ~~condenser heat transfer block~~ first fluid cold plate 530 is mounted to a retention plate mechanically tied down to the drawer chassis.

Please replace paragraph [0025] with the following amended paragraph:

[0025] A module system cold plate ~~[[530]]~~ 540 (i.e., a “second fluid cold plate” in the appended claims) is provided for each electronics drawer in the rack and is mounted via springs 550 to a mounting plate 560 mechanically tied to the rack frame supporting the drawers. In this embodiment, the modular system cold plate 540 is allowed to project a small distance through an opening in the back of the electronics drawer when the drawer is undocked. When the drawer is docked, the ~~condenser heat transfer block~~ first fluid cold plate 530 contacts the ~~modular~~ module system cold plate 540 and causes the springs to compress. The reaction force due to the compressed springs provides the mechanical force which ensures coplanarity between or physical engaging of the first planar heat transfer surface of the ~~condenser heat transfer block~~ 540 first fluid cold plate 530 and ~~[[a]]~~ the second planar heat transfer surface of the ~~module cold plate 530~~ module system cold plate 540. This ensures good thermal contact between the ~~condenser~~ first fluid cold plate 530 and the module system cold plate 540. A liquid coolant line 545 is also shown in the figure, as are fan 160, electronics cards 200, hard drive 210, and air exhaust vents 220, by way of example.